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VOL. 35-51

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PHILIPPINE BUREAU
OF EDUCATION

BULLETINS

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BULLETIN No. 43-1917
BUREAU OF EDUCATION
DEPARTMENT OF CITY SCHOOLS

PHILIPPINE SCHOOL OF ARTS AND TRADES

CATALOGUE 1917-18



MANILA
BUREAU OF PRINTING
1917

BUREAU OF EDUCATION PUBLICATIONS.

[Abbreviated list.]

ANNUAL REPORTS:

First to Seventeenth Annual Reports of the Director of Education. 1901-16. (Supply exhausted except for 1911, 1918, 1915, and 1916 editions.)

BULLETINS:

- 1 to 8 and 10 to 30, inclusive. Various subjects relating to the early activities of the Bureau. Editions for the most part exhausted and material obsolete.
9. A List of Philippine Baptismal Names. 1905. (Revised, 1915.)
31. School and Home Gardening. 1910. (Revised, 1913.)
32. Courses in Mechanical and Free-hand Drawing. 1910. (Edition exhausted.)
33. Philippine Hats. 1910. (Edition exhausted.)
34. Lace Making and Embroidery. 1911. (Edition exhausted.)
35. Housekeeping and Household Arts—A Manual for work with the Girls in the Elementary Schools of the Philippine Islands. 1911. (Edition exhausted.)
36. Philippine Normal School—Catalogue and Announcement. 1911. (Edition exhausted.)
37. School Buildings and Grounds. 1912. (Supply exhausted.)
38. School Buildings—Plans, Specifications, and Bills of Material. 1912. (Supply exhausted.)
39. A Manual of Free-hand Drawing for Philippine Primary Schools. (See textbooks: Free-hand Drawing for Primary Grades.) Vol. I, Grades I & II; and Vol. II, Grades III & IV. (Supply limited. Vol. I exhausted.)
40. Athletic Handbook for the Philippine Public Schools. 1911. (Revised, 1913.) (Edition exhausted.)
41. Service Manual of the Bureau of Education. (Revised, 1917.)
42. Intermediate English, II—Notes, Directions, and Aids to the Preparation of the Correspondence Study Course. 1911.
43. Philippine School of Arts and Trades—Catalogue. 1912. (Edition exhausted.)
44. Libraries of Philippine Public Schools. 1912. (In course of revision.)
45. The School of Household Industries. 1912. (Supply exhausted.)
46. The Industrial Museum, Library, and Exhibits of the Bureau of Education. 1913.
47. Good Manners and Right Conduct. 1913. (Supply exhausted.)
48. A course in Civics. (In course of preparation.)
49. Industrial Fiber Plants of the Philippines. 1913.
50. Arbor Day and School Holidays. 1915.
51. Philippine School of Commerce. 1913. (Supply limited.)
52. Philippine School of Arts and Trades—Nautical Department. 1913. (Supply exhausted.)
53. Elementary Course in Plain Sewing. 1913. (In course of revision.)
54. A Handbook of Industrial Plants in Common Use. 1915.

CIVICO-EDUCATIONAL LECTURES:

The Rights and Duties of Citizens of the Philippines; The Prevention of Diseases; Rice; Diseases of Animals; Coconut Beetles; The Housing of the Public Schools; Coconuts; Corn. (Supply exhausted.)

THE TEACHERS' ASSEMBLY HERALD:

Volumes I-V. 1908-1912. (Supply exhausted.)
Volume VI. 1913. (Supply exhausted.)

THE PHILIPPINE CRAFTSMAN:

Volumes I to V. 1912-17. (Supply limited.)

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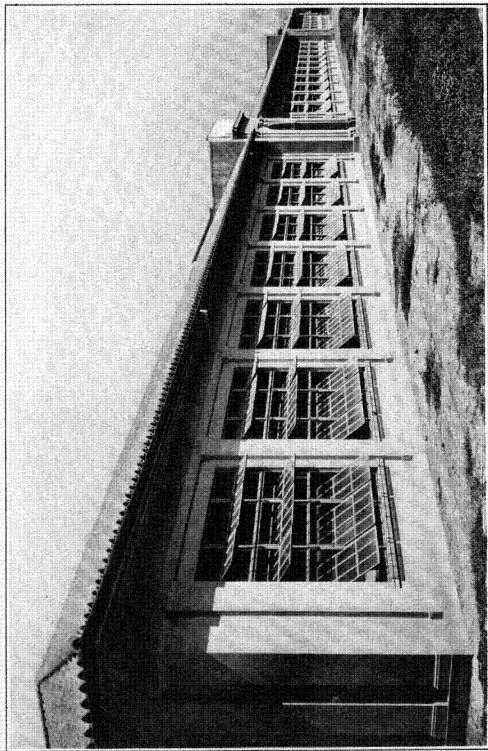
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TRADE SCHOOL, MANILA.

BULLETIN No. 43-1917

Philippine
BUREAU OF EDUCATION

DEPARTMENT OF CITY SCHOOLS

PHILIPPINE SCHOOL OF ARTS AND TRADES

CATALOGUE 1917-18



MANILA
BUREAU OF PRINTING
1917

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Philippine Union (3-27-18)g

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ADMINISTRATIVE OFFICERS, INSTRUCTORS, AND EMPLOYEES OF THE PHILIPPINE SCHOOL OF ARTS AND TRADES.

Frank W. Cheney..... *Principal.*

Ironworking departments:

Frank Rhodes.....	In charge.
F. M. Fisher.....	Instructor, auto repairing.
Amado Ignacio.....	Instructor, machine shop.
Senicio Perlas.....	Instructor, iron-bench shop.
Francisco Recato.....	Instructor, blacksmith shop.
Daniel Estrada.....	Instructor, auto driving.
Nemesio Vasquez.....	Instructor, auto driving.

Woodworking departments:

W. H. Hunsche.....	In charge.
Pedro de Jesus.....	Instructor, wood-bench shop.
Amando Viola.....	Instructor, wood-machine shop.
Pedro Ardeña.....	Instructor, wood-machine shop.
Perpetuo Jaraza.....	Instructor, wood turning.
Lorenzo Vidad.....	Instructor, building shop.
Conrado Salanga.....	Instructor, building shop.
Bartolome Pascual.....	Instructor, wood finishing.

Academic Department:

James P. Cooley.....	Principal.
H. A. Wendt.....	Instructor.
Miss Estella M. Murdoch.....	Instructor.
Mrs. F. B. Mires.....	Instructor.
Ceferino Purisima.....	Instructor.
Dominador Fernandez.....	Instructor.
Eutiquiano Achacoso.....	Instructor.
Simplicio Peña.....	Instructor.
Andres Adolfo.....	Instructor.

Drafting Department:

Teofilo del Rosario.....	In charge.
Ambrosio Romans.....	Instructor.
Regino Estolero.....	Instructor.
Florencio Choco.....	Instructor.

Surveying course:

George H. Rekate.....	Field Instructor.
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Clerical force:

Leonardo Matias.....	Cashier and property clerk.
Pedro de la Cruz.....	Correspondence and records.
Marcelino Vergara.....	Stenographer.
Gelasio Astraquillo.....	Storekeeper.

Special Duties: Mr. Hunsche, baseball; Mr. Wendt, track and field;
Mr. de Jesus, volley ball; Mr. Peña, restaurant; Miss Murdoch, library.

THE PHILIPPINE SCHOOL OF ARTS AND TRADES

HISTORICAL SKETCH

In 1889, nine years before the American occupation, the Escuela de Artes y Oficios (School of Arts and Trades) was established in Manila under the Spanish régime. The records show that this school had at one time an enrollment of 1,763 pupils, with actual attendance unknown. Courses were given in printing, carpentry, carving, masonry, ceramics, blacksmithing, shoemaking, tinsmithing, wheelwrighting, and commercial branches. Originally the school was located in the building now remodeled and occupied by the Bureau of Printing. The Revolution of '96 caused a decrease in attendance, and before the American occupation the school was closed.

In 1901, when the civil government under Governor William H. Taft succeeded the military government under General MacArthur, the first American teachers in the Bureau of Education were already in Manila. The Organic Act which established civil administration, made provisions for the Philippine School of Arts and Trades and the School of Commerce. Thus the work formerly done by the Escuela de Artes y Oficios is now accomplished by the Bureau of Printing, the Philippine School of Arts and Trades, and the Philippine School of Commerce, the last two institutions having an aggregate enrollment of more than seventeen hundred students.

From 1901 to 1906 the Philippine School of Arts and Trades was housed in temporary buildings at the old exposition grounds on Padre Faura. From 1906 to the beginning of the school year in June, 1916, it occupied buildings belonging to the city of Manila on Arroceros. Ever since the school was first opened, plans have been under consideration for the construction of permanent buildings. The first of these was completed and occupied during the summer of 1916. At the present time, academic instruction and drawing are carried on at the old site on Arroceros, while all the shops are housed in the new building on San Marcelino. The new plant, as proposed, will provide accommodations for one thousand pupils, and will be adequately lighted and arranged for evening classes.

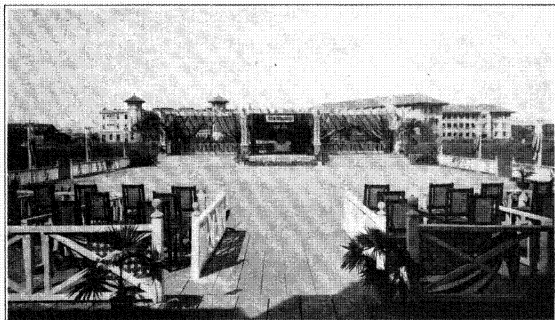
Since the opening of the Trade School the number of courses has been gradually increased from three, in telegraphy, iron-working, and woodworking, to thirteen, which include surveying,

cabinet-making, building, machine-shop practice, blacksmithing, stationary engineering, preparatory engineering, auto repairing, auto driving, vulcanizing, drafting, and a normal industrial course for teachers. Short courses in wood turning and wood finishing are also given in connection with woodworking. The attendance has increased from a mere handful of pupils to nearly nine hundred. The entrance requirements have been raised from practically nothing but an age limit to the completion of the primary grades. The academic work has gradually expanded from the merest rudiments of English and arithmetic to a full high-school course. The standard of the work in all departments has been steadily raised, until the Civil Service Bureau has recognized its thoroughness by making the graduates of the normal industrial course eligible for appointment as Government teachers without further examination.

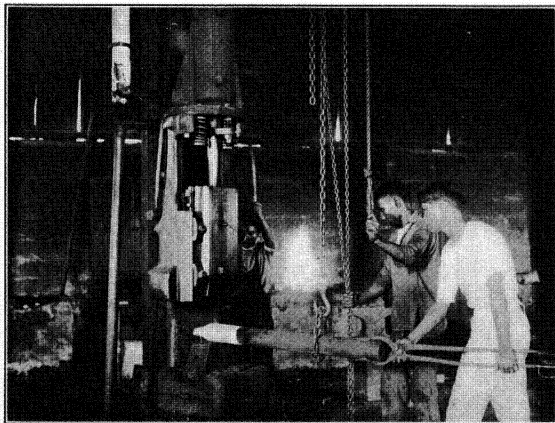
At the beginning the Trade School teaching force was practically all American, most of the work being of a technical nature and requiring men with such training as could not be obtained in the Philippines. As time went on the school began to turn out graduates who were skilled mechanics and when increased attendance necessitated more teachers they were secured from among the graduates of the school. Numerous American teachers who left the school either by transfer or resignation have been replaced by Filipinos who were trained under them. Eight years ago every shop was in charge of an American instructor. To-day there are only three American shop teachers, all the others being Filipinos, most of whom received their training in the school. Two Americans act as foremen, one of woodworking, the other of ironworking, practically all of the detail work being done by Filipino assistants. In 1908 the school employed 14 Americans and 11 Filipinos. In 1917 of its 34 employees, 9 were Americans, 1 Spanish, and 23 Filipinos. Of this number, 15 are graduates of the Trade School, and of these 15, 4 are in charge of shops.

GENERAL STATEMENT

The school is designed primarily to train young men who plan to follow a trade for a livelihood. The purposes of the preparatory engineering and of the normal industrial teachers' courses are explained by the names themselves. Every student upon admission is required to sign a written statement that it is his intention to finish his course and, upon graduation, to follow the trade which he pursued in school. Thus it is presumed that every pupil is in earnest and that he has a definite purpose in



THE AUDITORIUM BUILT BY TRADE SCHOOL STUDENTS FOR THE FIRST ALUMNI REUNION, MARCH 29, 1917.



FORGING WITH A STEAM HAMMER—BLACKSMITH SHOP.

attending. If he demonstrates that he has no mechanical tendencies or that he is not doing his best, he is immediately advised to leave. Each year so many students have applied for admission that in some departments it has been found necessary to keep a waiting list. Every student must work hard and put forward his best efforts in order to be worthy of a place in the school.

LOCATION AND BUILDINGS

The permanent site of the school is on Calle San Marcelino at the intersection of Ayala Boulevard. The new shops are completed and occupied. Academic work and mechanical drawing are still being conducted temporarily in the old buildings facing the Botanical Gardens on Calle Arroceros. Plans are under consideration for the new academic buildings, and work will be commenced on them as soon as funds are provided for the purpose. At the present time the schedule is so arranged as to give the student ample time to transfer from one department to the other between classes.

ADMISSION OF PUPILS

For admission to the trade courses the applicant must have completed the primary grades in the public schools, or their equivalent in some other recognized institution of learning. The academic subjects are so scheduled that pupils of higher attainments may proceed with their academic instruction without repeating any of their previous work. The possession of an intermediate certificate, or its equivalent, is required for admission to advanced courses. In other words, an applicant may enter the Trade School in any grade, from the fifth to the fourth year, secondary, provided he can show proper credentials. Unlike the practice in other trade schools of the Islands, pupils are classified by their shop year rather than by their academic ratings, so that a first-year Trade School student may be in any grade higher than the fourth.

Only strong, well-developed boys over 14 years of age need apply for admission. The shop work is difficult and cannot be performed satisfactorily by boys below the average in size and strength.

REGISTRATION OF PUPILS

Matriculation takes place during the first two weeks of school. After this period pupils are admitted occasionally by transfer when there are vacancies. Students entering after school opens

are required to make up all past work both in the shop and academic courses. In case they enroll after the first two months, they cannot be given shop credit toward graduation for the remainder of the year, unless their work is exceptionally good. Each year many applicants are refused admission because of lack of room. Those coming from distant provinces should be present on the opening day or, better still, they should mail application cards in advance. Old pupils returning to the school are registered ahead of new pupils on a date announced yearly by the principal.

FEEES AND TUITION

No tuition is charged. A fee of ₱1 is required from each intermediate pupil and of ₱2 from each secondary pupil to cover loss and breakage of tools, and to support athletics and the library. This fund is in charge of the school athletic association, is audited at stated intervals by a committee of pupils and teachers, and can be used only with the consent of the pupils for purposes other than those above stated.

SCHOLARSHIP

No one is allowed to remain more than two years in the same grade. If a student fails a second time to make the required standing, he is dropped from the rolls. All students must take academic work, except those in the auto-driving classes. Low grades in shop work for three months are considered sufficient cause for dropping a pupil, no matter what his academic ratings may be. No special students are admitted to any course.

ATTENDANCE

Tardiness is not allowed in any department. If a student is tardy, he is considered absent from his first class. Absences are classified as excusable and inexcusable. Excusable absences are those caused by sickness, death of near relatives, flood, fire, or other reason beyond the student's control. An excuse must be presented in the form of a letter signed by the parent, guardian, or doctor. Excusable absences can be made up at the convenience of the teachers; if in the shop, by working on Saturdays, holidays, or vacations, for every hour of the time lost; if in the academic department, by giving satisfactory evidence that the lessons missed have been made up. Inexcusable absences cannot be made up. Five per cent is deducted from the monthly grade for each of such absences.

Five consecutive absences are considered as evidence that a pupil has left school, and he must apply to his principal for

reinstatement, if he wishes to come back. Fifteen inexcusable absences during a school year are considered sufficient ground for dropping a pupil permanently from the rolls.

DISCIPLINE

Strict discipline is enforced at all times. As no set rules for good conduct have been made, the principal of the school uses his own judgment in punishing offenders. Each student is expected to act the part of a gentleman at all times, and is treated as such until he proves himself to be otherwise. A first serious offense is punished by suspension for a period of not less than three days nor more than two weeks; a second offense, by suspension for the rest of the school year or by expulsion.

OPPORTUNITIES FOR SELF-SUPPORT

Many advanced students earn all or part of their living expenses while attending school. It should be borne in mind, however, that the regular class hours occupy all of a student's time from 7.30 a. m. to 4 p. m., with a short recess at noon, and that the time for outside work is very limited. A few advanced students are employed on commercial jobs at the school on Saturday mornings and during vacations. No student from the provinces should come to Manila depending on finding a job that will help him earn his expenses during his first year. Fairly good board and lodging can be obtained for about ₱16 per month, exclusive of laundry. Several excellent student dormitories are conveniently located. St. Rita's Hall in Intramuros, the Methodist Dormitory on Isaac Peral, and the student branch of the Y. M. C. A., Manila, are ideal places for Trade-School boys to live. The first is Catholic, the second, Protestant, and the third, nonsectarian. Residence in the last mentioned includes membership and the privilege to use the gymnasium, tennis courts, swimming pool, and library. As all of these dormitories are continually full, application for admission should be made at least two months before the opening of school.

MEDICAL ASSISTANCE

Free medical assistance is given to all pupils by the Philippine General Hospital upon the presentation of a request signed by the principal of the school.

ATHLETICS

The work in the shops develops the pupils physically. Moreover, athletics is given an important place in the school curriculum. The Trade School has always had one of the strongest

baseball teams in the Islands, and in track, volley ball, and indoor baseball its students have made very good records. In addition to engagements with outside teams, intershop and inter-class competitions are held, the best players developed by this means being chosen to form the teams that represent the school. Every Trade School student takes part regularly in some form of athletics.

SCHOOL EXCURSIONS AND VISITS OF INSPECTION

Visits of inspection to the largest commercial and manufacturing plants in the city are made by the fourth-year shop classes. Great interest is taken in these trips and considerable benefit is derived from them. Among the places visited annually are the Insular Ice Plant, the Bureau of Printing, the Hike Shoe Factory, the Bureau of Science, the Cadwallader-Gibson Lumber Company's sawmill at Limay, and the Germinal Tobacco Factory.

LIBRARY

A library of about 2,500 books is open at all times for the use of teachers and pupils. The books have been carefully selected and include a large number of technical works pertaining to trades, biography, travel, history, art, and fiction. Current numbers of fifteen standard magazines that are of interest to students are always on hand.

CERTIFICATES AND DIPLOMAS

Graduates from the normal course for industrial teachers are eligible to civil-service status as junior industrial teachers without further examination.

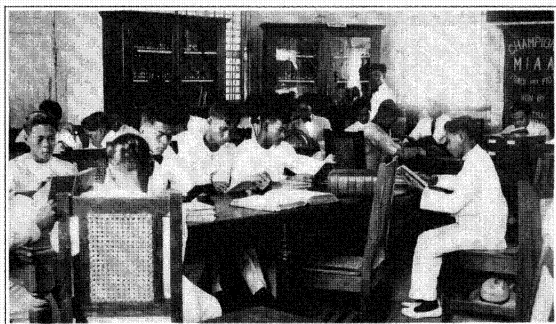
Graduate certificates are granted to those pupils who satisfactorily complete a four years' trade course and the academic subjects and drawing prescribed for first year, secondary, and who have worked at a trade successfully for one year after leaving the school. Diplomas are granted to those pupils who complete the academic curriculum of the secondary course at the same time with their four years' course in the shops.

Special certificates are issued to those who complete their four years' shop work but who fail to attain the required academic standing.

PLAN OF INSTRUCTION

COMMERCIAL WORK

One of the most important features emphasized in the school is the commercial work which is done, not only for various branches of the Government, but also for private individuals. Nearly every article made by a student during his last three



A CORNER OF THE TRADE SCHOOL LIBRARY.



TRADE SCHOOL BASEBALL TEAM, 1915-16

years in the shops is of some mercantile value. The receipts from this work pay for all materials and supplies used by the school, and make it possible to employ a great deal of student labor which is performed outside of school hours and during vacations. This has enabled many students to earn part of their expenses during the latter half of their course. From four to five thousand pesos are paid annually to students for labor.

Work in all shops at the beginning is confined to carefully graded exercises from blue prints. Care has been taken to select only such exercises as are of practical worth and, whenever possible, the making of salable articles of simple workmanship is substituted for them.

After the first year the pupils are advanced in commercial work as rapidly as possible. Discrimination is used in accepting only such orders as are of practical educational value. The work on these orders is apportioned among the students according to their experience, the fourth-year students being placed in charge of jobs with second and third year students as helpers. The helpers of one year are the foremen and contractors of the next. Thus a student learns to look at his work from two points of view.

Many schools in the United States condemn commercial work, though all of them exhibit with pride every article of practical value that is made by its pupils. Although commercial work is not feasible in most American schools, there is no question as to its value in the Philippines. An American trade school is usually located in, or near, one of the large manufacturing centers. It could produce commercial articles only in competition with private business. Its graduates usually go out as skilled apprentices and finish learning their trades in the factories, while in the Philippines a boy must depend upon what he learns in the school to earn a living, because, except in a few of the largest cities, industries of all kinds are in their infancy.

The American boy learns modern shop organization and business practice after he leaves school; the Filipino boy has few such opportunities. For this reason, an accurate system of accounting has been introduced in the Trade School. For all commercial jobs work orders are made out, labor is reported on daily time slips, materials are issued by the storekeeper only on properly written requisitions, and tools are checked in and out by student tool keepers. Special stress is laid on working full time and deductions are made for time lost. Although commercial work is strongly emphasized and many phases of

the factory system are in vogue, yet the use of abstract exercises during the first year, the gradual change from theory to practice, and the correlation of drawing, academic, and shop work make the Trade School a real educational institution rather than a factory with its usual attendant evils.

ACADEMIC WORK

In order to have longer periods in the shops, since, in a trade school shop work is of first importance, several of the minor subjects of the regular intermediate and secondary courses have been omitted. The daily program for each student consists of three full hours in the shop, one and one half hours of mechanical or free-hand drawing, one period (45 minutes) of mathematics, one period of English, and one period of reading, spelling, or literature.

In mathematics stress is laid upon practical problems which are taught in connection with, or in the place of, the regular text. They are often taken from current work and deal with common questions arising in the shop. Local prices and standards are used.

In language study phrases, sentences, paragraphs, and themes dealing with shop tools, materials, and projects are employed in compositions. In addition to the regular classroom work, tri-weekly lessons in shop English and practical problems are given by the shop instructors.

In reading literature that deals with industrial subjects is utilized with the purpose not only of increasing the pupil's available knowledge, but also of teaching him the dignity of labor. Current magazines and newspapers are read in class and prevailing topics are discussed and used as subjects for composition. Outside reading courses, for which credit is given, are also provided.

SOCIETIES

The school has several literary societies organized among the secondary pupils for the study of public speaking, literature, and parliamentary practice. A critic teacher is assigned to attend each meeting and to give advice in the selection of topics and in methods of presentation. The senior class, which is organized early in each school year, devotes many of its meetings to the giving of literary programs and to impromptu speaking.

COURSES

TRADE COURSES

The trade courses are as follows: Machine-shop practice, blacksmithing, stationary engineering, auto driving, auto re-

pairing, woodworking, building, and bamboo furniture making. The advanced courses are drafting, normal course for industrial teachers, preparatory engineering, and surveying. The completion of the intermediate course is necessary for admission to any of the first three advanced courses. The completion of the second year, secondary, is necessary for admission to the surveying course.

ACADEMIC COURSES

A pupil who has completed the primary course is eligible to enter the school. The academic work includes the essential subjects of the intermediate and secondary courses. The trade courses require the completion of the academic work of the first year, secondary; while the advanced courses require the completion of the fourth year, secondary. The prescribed work is as follows:

GRADE V

1. Reading and spelling. One period daily.
 - (a) Carter's Reader, Book I.
 - (b) Fifty Famous Stories.
 - (c) Good Manners and Right Conduct.
 - (d) Phonics.
 - (e) Outside reading, eight books required.
2. Grammar and composition, and conversational English. One period daily.
 - (a) Elementary Grammar and Composition, Gibbs, revised edition.
3. Arithmetic. One period daily.
 - (a) Intermediate Arithmetic, Mercer-Bonsall, Part I, completed.

GRADE VI

1. Reading and spelling. One period daily.
 - (a) Carter's Reader, Book II.
 - (b) Good Manners and Right Conduct.
 - (c) Phonics.
 - (d) Outside reading, nine books required.
2. Grammar and composition, and conversational English. One period daily.
 - (a) Advanced Grammar and Composition, Gibb's, Revised Edition, Part I, completed with exceptions noted in Circular No. 107, s. 1914. Much oral drill to be given in class.

3. Arithmetic. One period daily.

- (a) Intermediate Arithmetic, Mercer-Bonsall, Part II, completed.
- (b) Supplementary Problems for Trade Schools and Trade Classes.

GRADE VII

1. Reading and spelling. One period daily.

[First semester.]

- (a) History of the Philippines, Jernegan.
- (b) Good Manners and Right Conduct.
- (c) Current newspapers and periodicals.
- (d) Phonics.

[Second semester.]

- (e) The Philippine Citizen, Jernegan.
- (f) Current newspapers and periodicals.
- (g) Outside reading, ten books required during the year.

2. Grammar and composition, and conversational English. One period daily.

- (a) Advanced Grammar and Composition, Gibbs, revised edition, Part II, completed with exceptions noted in circular No. 107, s. 1914.
- (b) Oral drill given in class.

3. Arithmetic. One period daily.

- (a) Intermediate Arithmetic, Mercer-Bonsall, Part III, completed with exception of algebra problems.
- (b) Supplementary Problems for Trade Schools and Trade Classes.

FIRST YEAR, SECONDARY

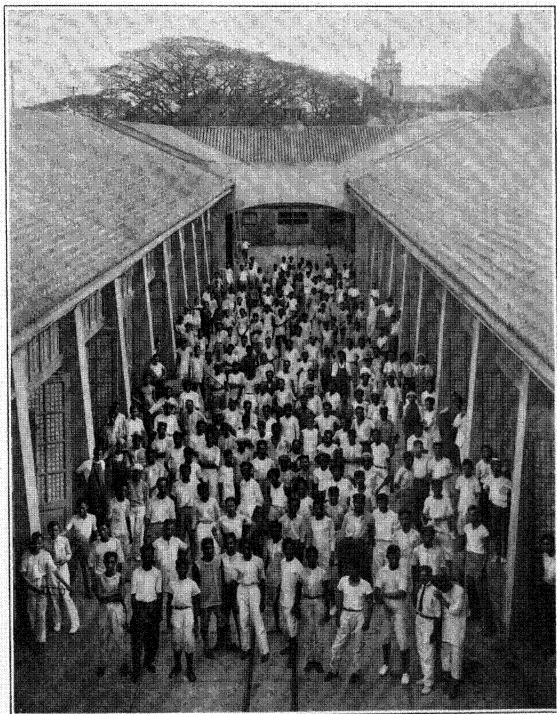
1. Literature. One period daily.

[First semester.]

- (a) Captains of Industry.
- (b) Good Manners and Right Conduct.
- (c) Figures of speech; library use, including use of Champlin's Encyclopaedias, use of dictionary, general reference books, classification and catalogue, parts of books, periodicals and newspapers, general reading.

[Second semester.]

- (d) Great American Industries, Minerals.
- (e) Great American Industries, Manufactures.
- (f) Phonics.
- (g) Periodicals and newspapers.
- (h) Outside reading, ten books required during the year.



THE AFTERNOON CLASSES IN THE SHOPS.

2. Composition. One period daily.

English composition, Brooks, Book I, enlarged, Chapters I, II, III, V, VII, IX. This course is outlined in detail in "English Composition, A Manual for Use in the Philippine Public Schools."

3. Algebra. One period daily.

Hawkes, Luby and Touton's First Course in Algebra, as far as page 272. The end of the first semester should find the class started on fractions.

SECOND YEAR, SECONDARY

1. Literature. Three periods a week.

[First semester.]

(a) The Alhambra.

(b) Reports given in class, taken from current periodicals.

[Second semester.]

(c) Treasure Island.

(d) Phonics.

(e) Outside reading, ten books required during the year.

2. Composition. Two periods a week.

English Composition, Book I, enlarged, Brooks, Chapters VIII, X, XIV, as detailed in "English Composition, A Manual for Use in the Philippine Public Schools."

3. History. One period daily.

General History, Myer's revised. See course of study for detailed outline.

4. Geometry. One period daily.

Plane Geometry, Wentworth-Smith, revised, pages 1 to 260.

THIRD YEAR, SECONDARY

1. Literature. Three periods a week.

(a) English Poems from Chaucer to Kipling; up to the Victorian Age.

(b) Silas Marner.

(c) The Merchant of Venice.

(d) Outside reading, eleven books required during the year.

2. Composition. Two periods a week.

English Composition, Book II, Brooks, following "English Composition, A Manual for Use in the Philippine Public Schools."

In the second, third, and fourth years of the secondary course, the equivalent of one period daily is divided between literature

and composition, three periods a week being allowed for literature to two of composition. The most satisfactory results have been obtained by giving three straight weeks of literature followed by two of composition.

3. Mechanics. One period daily.

Strength of materials.

4. Mathematics. One period daily.

[First semester.]

(a) Algebra, Hawkes, Luby and Touton, from page 272 to the end.

[Second semester.]

(b) Review Arithmetic, Smith.

FOURTH YEAR, SECONDARY

1. Literature. Three periods a week.

(a) English Poems from Chaucer to Kipling. Selections from the nineteenth-century poets.

(b) Eliot's Essay on "Five American Contributions to Civilization."

(c) Macbeth.

(d) Outside reading, thirteen books required.

2. Composition. Two periods a week.

[First semester.]

(a) English Composition, Brooks, Book II, Chapters IV and IX with short review of VI and VII.

[Second semester.]

(b) Business English, Commercial Correspondence, Belding.

3. Mathematics. One period daily.

[First semester.]

(a) Solid Geometry.

[Second semester.]

(b) Trigonometry.

4. Physics. One period daily.

Mid-year tests are given in these subjects. The questions are prepared by the principal and approved by the Director of Education.

DRAWING AND DESIGNING

Aim.—The aim in arranging the subjects in this department has been threefold: First, to offer such work as will correlate with the regular trade courses and will be of practical value

to a mechanic; second, to offer a normal course so designed as to prepare a teacher efficiently to conduct classes in the primary and intermediate grades of the public schools; and third, to offer a course planned to meet the large and growing demand for men trained in the technical details of the various branches of drafting.

Equipment.—The drawing building, which is situated at the old school site on Arroceros, is provided with 250 drawing tables each of which is equipped with a stool, drawing board, T-square, scale, and set of instruments. Special instruments are given out as required. The drawing boards are kept in conveniently located cases. The instruments, which are also kept in cases, are under the direct charge of monitors. The students are furnished all necessary equipment by the school and they are required to account for any loss or damage. Careful records are kept of the work and progress of each student throughout his career in the department.

A complete blue-printing equipment is maintained. Six frames make it possible to turn out as many as 250 prints in one day.

Drawing for trade courses.—The work in this course is different for each of the trades studied by the pupils, and is so arranged as to correlate with the practical work in the various shops. Beginning with sketching as a foundation for industrial drawing, thorough training is given in free-hand as applied to mechanical drawing, in the observance of minute details as illustrated in the proper proportions of a drawing, and in the reading of elementary shop drawings. Emphasis is laid upon the making of free-hand Gothic letters.

Instruction on the care and use of instruments is correlated with geometrical drawing, and such problems in construction are given as have a direct bearing upon shop work and aid most in developing the fundamental principles of mechanical drawing.

As the courses in drawing are closely correlated with the shop-work in woodworking, ironworking, blacksmithing, and building, the students in these various courses first make sketches and then complete working drawings for each of the exercises and articles made in the shops.

All the courses are of four years duration. Students who graduate from the school must complete all of their drawing at the same time they complete their shop courses. All students are enrolled in the drawing department, as soon as they are admitted to the school, and they spend two periods daily in the work.

A summary of the courses is shown at the bottom of page 20.

Drafting.—Drafting combines all the work of the other courses with special instruction of an advanced nature. In addition to their regular course, drafting students are instructed in blue printing and in reproduction work.

Applicants for the drafting course must have completed the intermediate academic curriculum and must have had at least two years of shop work. The academic work begins with the first year, secondary, and continues throughout the course. Drafting students devote six periods a day to drawing, two to free-hand work, and four to drafting. The work of this course is conducted as nearly as possible on the plan of a commercial drafting room. Graduates in Drafting are fully equipped to enter either the teaching or the commercial field. Employers frequently ask the department to recommend students for positions.

The four-years' course is divided as follows:

First year: Free-hand perspective, decorative design, rendering in colors, pen and ink sketching, geometrical drawing, lettering, orthographic projection, isometric projection, and blue printing.

Second year: Lettering, inking, projections, furniture designing, machine drawing, and simple house designing.

Third year: Development of patterns, building details, lathe details, and complete plans and specifications for a simple building.

Fourth year: Architectural design and specifications for advanced construction, complete details and assembly for shaper and planer, and other advanced work of an elective nature.

Brief of the drawing schedule for various courses.

Year.	Woodworking.	Ironworking and Blacksmithing.	Building.	Drafting.
First.	One half year mechanical drawing. One half year free-hand drawing.	One half year free-hand drawing. One half year mechanical drawing.	One half year free-hand drawing. One-half year mechanical drawing.	Mechanical drawing. Free-hand drawing. Blue printing.
Second.	Lettering, inking, projections. Working drawings of elementary furniture.	Lettering, inking, projections. Simple machine drawing.	Simple house designing and construction.	All outlined second-year work of wood-working, iron-working, and building sections.
Third.	Development of patterns and lathe details.	Development of patterns and lathe details.	Development of patterns and complete plans for simple building.	Development of patterns and all outlined third-year work in iron-working and building sections.
Fourth.	Complete plans and specifications for simple building.	Complete details and assembly for shaper and planer.	Complete plans and specifications for selected buildings of an advanced design.	All outlined fourth-year work in iron-working and building sections.

MACHINE-SHOP PRACTICE

This course requires four years, which are divided as follows: First year, blacksmith shop and iron-bench work. Second, third, and fourth years, iron-machine shop. As both the blacksmith shop and iron-bench work are of an elementary nature, first-year pupils are assigned to one of the shops for the first semester and to the other shop for the second semester.

During the semester in the blacksmith shop the pupils follow a regular series of exercises. For a more complete outline see the first year, blacksmithing course.

During the semester in the iron-bench shop, the work consists of a series of carefully graded exercises in chipping and filing, all the work being done from blue prints. Following are some of the exercises: The making of nuts, bolts, hammers, clamps, hinges, surface gauges, thumbscrews, etc. As scrapers, hacksaws, taps, dies, and drills, are needed in the courses, their care and use are taught. Accuracy, neatness, and patience, the qualities most essential to a successful machinist, are cultivated, and pupils showing themselves unable to acquire these habits are dropped.

The second year is spent in the machine shop. Here the student follows a series of exercises which involves the use of the various machines, taking them in order, the simplest ones first, and learning their use, adjustment, and care. The exercises include jobs on the drill press, such as laying out holes and drilling to a circle, planing flat pieces on the shaper, cutting keyways, setting up work with the surface gauge, planing angle plates, using chucks and face-plates on the lathe, testing centers, boring and turning collars, boring and turning a pulley, turning straight and tapering pieces to size, cutting right and left-hand threads. The use of the milling machine includes the cutting of key-wings, the laying out and cutting of gears, and the grinding of milling cutters.

The third and fourth years are devoted to the building of one or more machines. In addition, many machine-repair jobs are accepted, the work being done wholly by students under the supervision of an expert machinist. During the last half of the fourth year each student is required to pass a practical test in efficiency in which he is given a project involving the use of the important tools, machines, etc, and a time allowance equal to a journeyman's time.

Commercial work is accepted by the iron-machine department. This gives much valuable practice to the students and adds materially to the support of the school. The work is apportioned

in such a way as either to supplement or replace the regular exercises.

The iron-working department has the following equipment: Blacksmith shop for classes of 40, iron-bench shop for classes of 50; iron-machine shop for classes of 60, with the following machines: 1 planer, 1 universal miller, 3 drill presses, 1 drill grinder, 1 universal grinder, 1 bolt threader, 1 grindstone, 1 planer-knife grinder, 10 lathes of various sizes, 1 thirty-inch lathe, 1 forty-eight inch boring mill, and one radial press, forty-eight inches. The department also has an acetylene welding outfit.

STATIONARY ENGINEERING

The first three years of this course are exactly the same as the iron-machine shop course. During the fourth year the students specialize in the operation of machines. For use in this connection the school has the following equipment: One crude-oil engine, Snow, 65 horsepower; one steam engine, Ideal, 80 horsepower; one kerosene engine, Metz and Weiss; one steam boiler; two electric generators, exciters, switchboards, motors, and one centrifugal pump. Students are taught by actual apprenticeship the care and operation of one or more of the above machines.

BLACKSMITHING

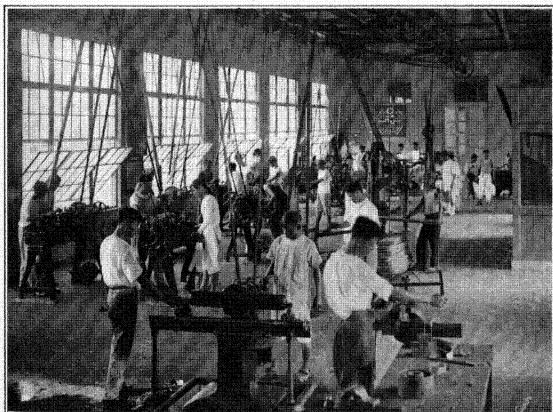
The blacksmithing course requires four years, the first three in the Trade School shop and the fourth in working at the trade, a certificate or diploma being issued when there is satisfactory evidence that the student has successfully completed a year's work at the trade.

The blacksmith shop is equipped for classes of forty, with twelve modern down-draft forges, anvils, tools, a steam hammer, a gas furnace, a power emery wheel, benches, and vises.

During the first year the student follows a series of exercises calculated to include all of the most common projects in bends, welds, joints, etc. The practice is to make each new student act as assistant to one of the third-year boys until he has become accustomed to the work. During this period he learns how to build a good fire, how to swing a sledge, and how to find his way about the shop. Before he can be trusted with good materials, he must acquire experience and confidence; his first work therefore is with cheap material. Old horseshoes are used as exercise stock and the pupil first learns to heat and weld them into stock of the right shape. The course, later on in the year, includes many useful articles, such as rings, eyebolts, hooks, chains, and bolts with thread and nut.



A PRIVATE MACHINE SHOP OPERATED BY A TRADE SCHOOL GRADUATE.



A CLASS AT WORK IN THE IRON-MACHINE SHOP.

The second-year work also follows a series of exercises, commercial jobs being substituted when those of the right kind can be obtained.

In the regular course the student makes a common set of blacksmithing tools, such as tongs, calipers, cold chisels, hammers, compasses, and punches. During the latter half of the second year each student makes a set of machine lathe tools. This work includes annealing, hardening, tempering, and case-hardening.

The third year is occupied wholly with commercial work, material for which is supplied by the iron-machine shop. This includes repairs on automobiles, the making of crank-shafts, forgings for gear wheels, and a great variety of miscellaneous forgings. During this year instruction is given in the use of the steam hammer and the gas furnace, and in welding with an acetylene torch.

The fourth year is spent in working at the trade outside of the school. The school authorities use every possible effort to obtain employment for these pupils. Certificates or diplomas are issued to those who prove that they have worked continuously and successfully as blacksmiths for a period of one year.

PREPARATORY ENGINEERING

Students who plan to enter the University after the completion of their four year secondary course are allowed to enroll in preparatory engineering. By taking this course, a student can complete his shop work before entering the University. An intermediate certificate is required for admission, but no pupil should attempt the course who has difficulty with mathematics.

The first year is spent at bench work in wood; the second, at bench work in iron; the third, at forge and foundry work; and the fourth, in machine-shop practice.

THE AUTO-REPAIRING COURSE

Four years are required for this course. Each student must take the regular academic work belonging to his grade and the full curriculum in mechanical drawing. His course in the shops is divided as follows: First year, blacksmithing, completing the regular course given to all machine-shop students; second year, chipping and filling, following the regular course; third year, machine shop, specializing in automobile parts; fourth year, automobile shop, miscellaneous work in auto repairing. During the last semester each student is required to learn auto driving, and must obtain a driver's license before graduating from the school.

The practical work of the auto-repairing shop consists in doing all kinds of repair work on motorcycles, automobiles, and explosive engines. While no exact curriculum can be outlined, the work covers every imaginable kind of repairing. In addition to the actual shop practice, lectures are given by the instructors on the theory of explosive engines, electric wiring, magnetos, carburetors, etc. A subsidiary course is also given in tire repairing, for which purpose the school has a well-equipped vulcanizing plant.

THE AUTO-DRIVING COURSE

A student entering this course must be 18 years of age, strong, healthy, with good eyesight, and he must be able to speak English and understand it as well as the average fifth-grade student. He must be provided with a cedula and a student's license permitting him to take lessons in driving on the streets of Manila. The license can be obtained at the automobile division of the Bureau of Public Works.

The length of the course depends upon the rapidity with which each individual student learns to drive, but the average duration is between six and eight months. Examinations are given whenever, in the opinion of the driving teachers, a class of students is ready to be examined. The examination consists of questions which are given orally, and a test in actual driving. Any student who fails to pass after three examinations is dropped from the class.

Students of this course are not required to take academic work or drawing, and they report to the shop only at the times specified for their lessons.

THE WOODWORKING COURSE

Four years are required for this course. Each student must take the prescribed academic work throughout, and must complete successfully the four years of drawing that parallel his shop course. Credit is given for work done in other trade schools, as explained under separate heading. In computing the final yearly grades in shop and drawing, shop counts 75 per cent and drawing 25 per cent out of a possible 100 per cent. To pass it is necessary to obtain a passing grade in each department. The course in the shops is divided as follows: First year, wood-bench shop; second, third, and fourth years, wood-machine shop.

During the three years in the wood-machine shop each student is required to complete a three months' course in wood turning, and to spend not less than three, and not more than six months

in the finishing room. No definite period is set for either wood turning or wood finishing, but turning is given preferably during the third year and finishing during the second and fourth years, three months being devoted to each.

The wood-bench shop is so called, because the work done is wholly bench work and no machines are employed. In many ways the first year of the woodworking course is the most important. It is the trying-out period during which the poor students are eliminated. It is the year when the foundations are laid for all that is to come. The shop teachers consider that if a boy finishes his first year successfully, his progress through the other three years of his course is assured. In the woodbench shop a boy first becomes acquainted with tools. He learns the fundamental principles of woodworking, the shop vocabulary, the structure of wood, and the names and species of native woods. Although he afterwards learns to do by machine many of the tiresome processes of woodworking, he never forgets the training of the first year. The course, comprising fourteen exercises involving all of the common tools and the different methods in which they can be used, is outlined in the *Manual of Woodworking*, pages 52-53. The text, *Woodworking, a Manual of Elementary Carpentry for Philippine Public Schools*, is used in the shop classroom.

As the shop periods are longer in the Philippine School of Arts and Trades than in any other trade school in the Islands, a majority of the first year woodworking pupils complete the prescribed exercises during the first eight months. Many of the exercises are useful when finished, and the work which follows is in a logical sequence. Students are encouraged to make simple articles for their own use, which they may purchase at cost of the material; and, if they fail to supply their own work, they are given simple jobs from the commercial orders of the wood-machine shop. Triweekly lectures and object lessons are given during shop time in a classroom specially arranged for the purpose.

The wood-machine shop handles all the work of the second, third, and fourth years, during which period it is wholly on the commercial order. In the calendar year of 1915, this shop produced more than 100 different articles of furniture. First-year pupils are assigned to third and fourth year students as helpers. The most proficient of the third-year, and all of the fourth-year students, are placed in charge of jobs. By the time a student completes his three years in the shop, he has made a large number of articles on his own responsibility, and he has learned to use independently every machine in the shop.

Regular lessons on estimating and various shop problems taken from work under construction are given in the classroom by the shop teachers.

The wood-machine shop has the following equipment:

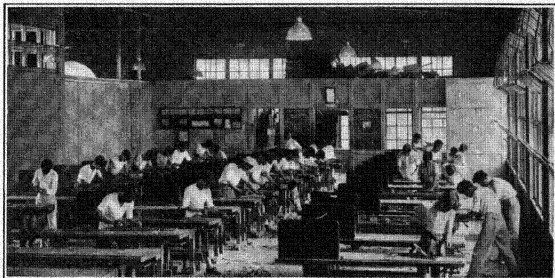
2 planers.	2 wood trimmers.
2 circular saw tables.	1 sensitive drill.
1 bandsaw.	1 power grindstone.
1 band re-saw.	1 patternmaker's lathe.
1 jig saw.	1 large lathe.
1 mortiser.	12 small lathes.
1 tenoner.	Benches and tools for a class
1 hand-jointer.	of fifty.
2 shapers.	

Wood turning, which is included in the woodworking course, is given during the third or fourth year. Any student who wishes to specialize in wood turning is allowed to take six months of it, provided his doing so does not interfere with the prescribed work of any other student. The course given is outlined in the new woodworking text, pages 231-272.

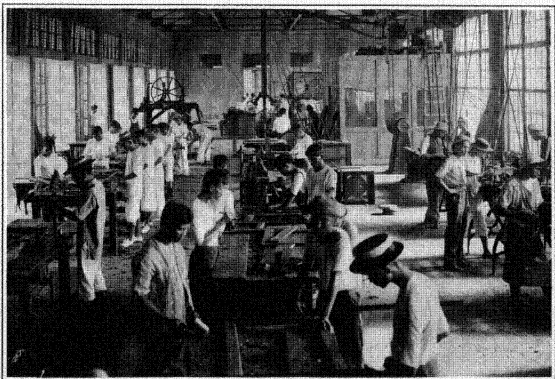
Wood finishing is also taught as a part of the woodworking course. In the finishing room each pupil acquires a knowledge of the following: Work preparatory to finishing, filling, French polishing, wax finishing, staining, varnishing, repairing damage to any of the above styles of finish, and packing and crating furniture for shipment.

Credit for work done in other schools is given under the following conditions: Any boy enrolling in the woodworking course who can show a certificate of graduation from an authorized trade school in the provinces is allowed to enter the wood-machine shop on probation as a third-year student. If his work is satisfactory, he can finish his shop course in two years. This is based on the assumption that his shop periods in the other school have been shorter, his three years in the provincial school just about equaling two years in the Philippine School of Arts and Trades. If he fails to demonstrate his efficiency, he may be demoted to second, or even first year, on recommendation of his shop teachers. As a rule, students from the following schools are given full credit: Bacolor, Malolos, Laoag, San Fernando (La Union), Sorsogon, Pangasinan, Leyte, and Iloilo. Graduates from provincial school shops giving the trade course and students who have had previous work in primary or intermediate school shops, are invariably enrolled as beginners. If they prove to be worthy of promotion, they are put into the second-year class at the end of the first semester.

During the fourth year of the course each student will be



A BEGINNERS' CLASS IN WOODWORKING.



A CLASS AT WORK IN THE WOOD-MACHINE SHOP.

allowed to earn a set of woodworking tools by working over-time on commercial jobs in the shops.

THE BUILDING COURSE

Students enrolling in this course must take the regular academic subjects of the grade to which they belong and the full schedule in free-hand and mechanical drawing, the requirements being the same as for the woodworking course.

The building course occupies four years, which are divided as follows: First year, wood-bench shop; second, third, and fourth year, building shop.

The work of the first year is very similar to that of the regular woodworker's course. Students are first taught the names and purposes of common tools and follow a set of exercises in their use until they have acquired a fair degree of proficiency. From this point the courses diverge, the building students being given exercises that employ the various joints pertaining to the builders' trade. In the shop classroom they are taught to compute board feet, to estimate, and to use the words and phrases describing their work in the shop. When the wood-bench shop is crowded, students are sometimes taken directly into the building shop for their first year's work, but the lessons given remain exactly the same.

The second-year work follows a set of exercises in house framing, truss building, and stair construction. As much practical outside work as can be obtained is given.

Repair and building jobs for the Trade School supply considerable material for lessons, the work being done under the supervision of third and fourth year boys. During the last half of the year the class erects a model building of wood, following standard blue prints furnished by the buildings division of the Bureau of Education.

The third-year work pursues the same general outline as that of the second year, except that the problems are more advanced and that the students are given their tasks as foremen or contractors with helpers from the second-year class. During the last half of the year a model building of concrete is erected from standard plans.

The fourth-year work is done wholly outside of the school, the students dropping their academic subjects and drawing, and spending all their time on building projects. While this plan has not been carried out in full during past years, it is intended to make it a permanent part of the building course. Students will be sent out on any job that is of good educational value, will be remunerated at wages sufficient to support them, and will be

graduated from the school when they have completed a year's successful work.

THE SURVEYING COURSE

The surveying course is open to any student who has satisfactorily completed the work of the second year, secondary. Students who have successfully completed the third or fourth year, secondary, will be entered as advanced students, provided that their ratings in mathematics, including algebra, geometry, and trigonometry are satisfactory; and a special effort will be made to complete their school instruction in one year, so that they may be detailed to field duty at the end of their first school year in this course.

The Bureau of Lands provides for a limited number of apprentice surveyors, who are rated as Government pensionados. Students receiving these scholarships are designated as apprentice surveyors and receive ₱20 per month. The second year, or until the student passes the civil-service examination, the compensation is ₱30 per month; the third year, or upon satisfactory completion of the second-year curriculum, ₱50 per month, with expenses while detailed to field parties outside of Manila; the fourth year, ₱60 with field expenses; the fifth year, ₱70 with field expenses. Upon termination of the contract period, if the student has qualified in the surveyors' examination and is rendering good service, he will be offered probational appointment as surveyor in the Bureau of Lands at ₱1,200. Appointments and promotions are made annually, except in cases where students qualify in the junior surveyor's, or the surveyor's examination. After appointment as junior surveyor the student is allowed the same vacation and accrued-leave privileges as are granted to all other civil-service employees of like grade.

Applications for appointment to this course should be made in writing to the principal of the high school, addressed to the Director of Lands, through the division superintendent of schools and the Director of Education. All applications must reach the General Office before May first.

Traveling expenses to Manila must be borne by the student.

In the first and second years, the student is required to attend the Philippine School of Arts and Trades during the forenoon of all school days and to pursue the course of studies prescribed by the Director of Education. All students are regularly matriculated as pupils of the Trade School and, as such, are governed by its rules at all times while on the school premises.

The afternoons are occupied with field work under the direction of an instructor detailed from the Bureau of Lands.

Students taking these scholarships will not be permitted to carry any other subjects than those prescribed for this course. Special diplomas for the surveying course of the Philippine School of Arts and Trades are issued to those who are graduated. All students of the course are required to take the junior surveyor's examination at the end of the first year. If successful, the student will be further required to sign a contract to be approved by his parent or guardian to study and work as junior surveyor in the Bureau of Lands for the period of four years from the first of July succeeding the date of examination. High-school graduates, at the end of the second school year, or upon successfully completing the course of instruction, will be permanently assigned to provincial survey parties for practical instruction and to duty as junior surveyors. Field instruction and duty continue throughout the third, fourth, and fifth years, or until the contract terminates.

Voluntary resignation without the approval of the Director of Lands results in debarment from appointment to any position in the Philippine Civil Service, or from matriculation in any public school during the same school year.

[For further details see Bureau of Education General Circular No. 8, s. 1916.]

RECORDS OF GRADUATES

Prior to the school year, 1916-17, 395 students were graduated from the various courses taught at the Trade School. Their classification is as follows:

Woodworking	168
Ironworking	123
Blacksmithing	31
Building	28
Wheelwrighting	14
Drafting	10
Wood carving.....	6
Ceramics	6
Auto repairing.....	4
Preparatory engineering.....	3
Industrial teaching.....	2
Total	395

As far as possible, records are kept of all graduates after they leave the school, but frequent changes of address or failures to answer letters of inquiry have made it impossible to account for a great many of them. At the beginning of the school year, 1916-17, 124 graduates were known to be teaching in the Bureau of Education. A majority of these teachers were woodworking graduates and were first employed at an average salary of

₱40 per month. In March, 1917, a circular letter was sent to each graduate whose address was known and 140 answered either in person or by letter. One hundred eight out of this number gave detailed information as to their salaries and positions. Following is a list classified as to trades:

Number.	Occupation.	Average salary.	Maximum.	Minimum.
48	Teachers	₱52.00	₱120.00	₱25.00
30	Mechanics	63.00	180.00	30.00
9	Draftsmen	65.50	100.00	30.00
7	Clerks	44.30	60.00	35.00
3	Engineers	83.00	100.00	70.00
1	Blacksmith	50.00	50.00	50.00
1	Electrician	45.00	45.00	45.00
1	Bookkeeper	60.00	60.00	60.00
1	Cine operator	45.00	45.00	45.00
1	Constabulary officer	200.00	200.00	200.00
1	Machinery salesman	100.00	100.00	100.00
1	Road foreman	100.00	100.00	100.00
108	Total	57.80	200.00	25.00

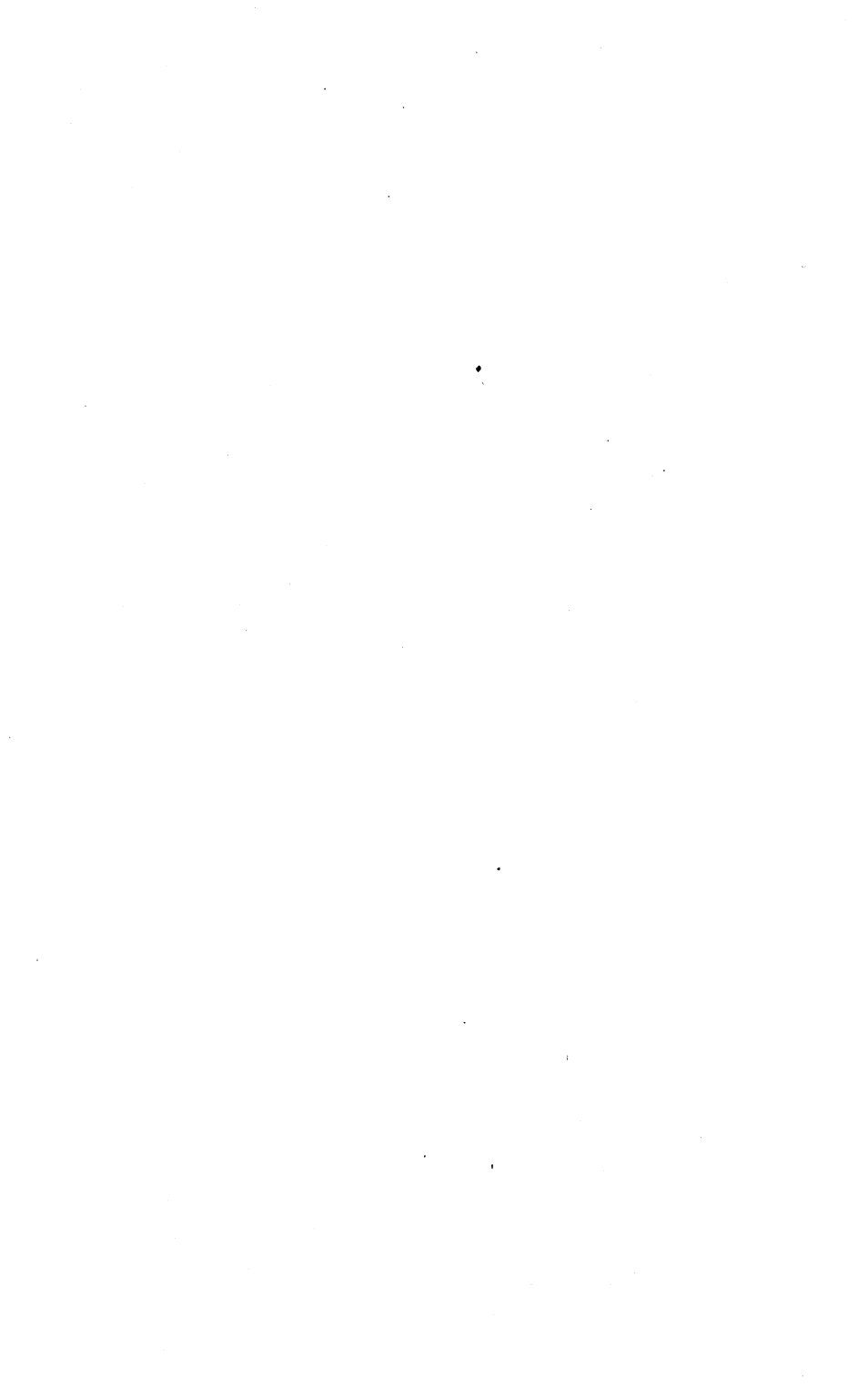
Of the 32 remaining, 13 were taking advanced work in other schools, 13 were engaged in independent business with no fixed income, and 6 reported themselves as unemployed.

Trade School graduates are found in every kind of business with an almost unvarying record of success at whatever they have undertaken. One graduate of the woodworking department is a successful farmer in Pangasinan; one is an aviator in California; two are employed in automobile factories in Detroit, U. S. A.; one is president of his home town (Victoria, Tarlac); another is a locomotive engineer; two are proprietors of private shops; and eight are adding materially to their incomes by playing professional baseball outside of working hours.

The graduating class of 1917.

Woodworking	33
Building	13
Ironworking	9
Preparatory engineering	6
Drafting	3
Auto repairing	2
Blacksmithing	1
Surveying	25
Total	92

Auto driving, while classed as a regular course in the Trade School, does not hold equal rank with the other trades, because the academic requirements are less rigid and the course is completed whenever the student obtains his driver's license. During each year about 40 students pass the driver's examination given by the Bureau of Public Works.



BUREAU OF EDUCATION PUBLICATIONS—Continued.

(Continued from second page of cover.)

TEXTBOOKS:

- Woodworking—A manual of Elementary Carpentry for Philippine Public Schools. 1908. (Edition exhausted.)
- Selected Short Poems by Representative American Authors. 1911. (Reprinted, 1913, 1915.)
- Commercial Geography; the Materials of Commerce for the Philippines. 1911. (Reprinted, 1915.)
- Samuel Johnson, Macaulay; Self-Reliance, Emerson; Gettysburg Address, Lincoln. 1911. (Reprinted, 1915.)
- Supplementary Problems for Trade Schools and Trade Classes in the Philippine Public Schools. 1913. (Reprinted, 1915.)
- Supplementary Problems for Domestic Science Classes. 1913. (Reprinted, 1915.)
- Supplementary Problems for Classes in Agriculture. 1915. (Revised, 1917.)
- Housekeeping—A textbook for Girls in the Public Schools of the Philippine Islands. 1914. (Reprinted, 1915.) (Edition exhausted.)
- Economic Conditions in the Philippines. 1913.
- Woodworking for Beginners. 1915.
- Free-hand Drawing for Primary Grades. Vol. I, Grades I and II; Vol. II, Grades III and IV. (Vol. I, supply exhausted.)
- Phonics, A Five Weeks' Course for Teachers of Primary Grades. 1915. (Revised, 1916.)
- Music for Primary Grades. 1915. (Supply exhausted.)
- Housekeeping—A Five Weeks' Course for Teachers. 1916.
- Embroidery—A Manual for use in Philippine Public Schools. 1915. (Revised, 1917.)
- English Composition—A Manual for use in Philippine Public Schools. 1916.
- Primary Course in Writing.

MISCELLANEOUS:

- Domestic Science—A Guide to Practical Instruction in Housekeeping, Sewing, Cooking, and Laundering in Grades III and IV of the Philippine Public Schools. 1908. (Edition exhausted.)
- Some Recipes for Preparing Jellies, Preserves, Pickles, and Candies from Philippine Fruits. 1911. (Edition exhausted.)
- Second and Third Annual Reports on Private Schools and Colleges of the Philippine Islands. 1911 and 1912. (Edition exhausted.)
- A Statement of Organization, Aims, and Conditions of Service in the Bureau of Education. 1911. (Several editions printed at Manila and Washington.) (Supply exhausted.)
- A Talk on Health Conditions in the Philippines. Dr. Victor G. Heiser, Director of Health. 1912.
- Suggested Daily Programs for Primary Schools. 1915.
- School and Home Gardening. 1914. (Reprinted, 1916.)
- Intermediate Gardening. 1914. (Reprinted, 1916.)
- School Ground Improvement. 1914. (Reprinted, 1916.)
- Supervision of Agricultural Activities. 1917.
- Local Geographical and Historical Notes. 1915. (Supply limited.)
- Course of Study for Primary Grades, with Suggestions to Teachers. 1915.

PHILIPPINE CRAFTSMAN REPRINTS:

1. Philippine Mats. 1913. (Supply limited.)
2. A Manual in Woodworking for Philippine Public Schools. 1915. (Supply exhausted.)

